US ROUTE 460 DRAFT SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT

SUPPLEMENTAL RIGHT-OF-WAY AND RELOCATIONS TECHNICAL REPORT

USACE FEDERAL PROJECT NUMBER: NAO-2008-03470 | FHWA FEDERAL PROJECT NUMBER: STP-000S (276) STATE PROJECT NUMBER: 0460-969-059, P101, C501; UPC: 100432

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ROUTE 460 LOCATION STUDY: FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT SUPPLEMENTAL RIGHT-OF-WAY AND RELOCATIONS TECHNICAL REPORT



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RIGHT-OF-WAY AND RELOCATIONS TECHNICAL REPORT

PREPARED FOR:

THE VIRGINIA DEPARTMENT OF TRANSPORTATION

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1.0 INTRODUCTION

The Virginia Department of Transportation (VDOT), in cooperation with the Federal Highway Administration (FHWA) and the United States Army Corps of Engineers (USACE) as joint lead federal agencies, has evaluated options for highway transportation improvements along the existing U.S. Route 460 (Route 460) corridor between Interstate 295 (I-295) in Prince George County and Holland Road (Route 58) in the City of Suffolk, Virginia.

In September 2014, the Draft Supplemental Environmental Impact Statement (SEIS) was issued to analyze five Build Alternatives and a No Build Alternative. Following the publication of the Draft SEIS in September 2014, VDOT determined that none of the five Build Alternatives evaluated over the extent of the study corridor would be viable options based on public comments that were received, input from the resource and regulatory agencies regarding the estimated environmental impacts, including potential Council of Environmental Quality (CEQ) referral, and the cost opinions that had been developed. However, in addition to the Draft SEIS supporting the ability to select one of the five alternatives studied or the No Build Alternative, it also supported combining sections of those alternatives, including the No Build Alternative, to form an alternative not individually evaluated as a standalone alternative in the Draft SEIS.

As a result, VDOT carefully reconsidered each of the Draft SEIS alternatives – in whole, in parts, and in hybrid combination with one another – in order to identify a single alternative that would sufficiently address the identified project Purpose and Need, while minimizing environmental impacts and providing a cost effective project. VDOT, in close coordination with FHWA, developed a Preferred Alternative that would consist of a combination of alternatives evaluated in the Draft SEIS, including the No Build Alternative and Build Alternatives 4, 2N, 3, and 1 (from west to east). This FHWA/VDOT Preferred Alternative consists of implementing the No Build Alternative between I-295 and one mile west of Zuni, upgrading the existing Route 460 between one mile west of Zuni and two miles west of Windsor, and constructing a new four-lane divided highway from west of Windsor to a new Route 460/Route 58 interchange in Suffolk.

In February 2015 the Commonwealth Transportation Board (CTB) approved the location for the Route 460 corridor improvements, consistent with the FHWA/VDOT Preferred Alternative. Additionally, the USACE stated in January 2015¹ that it did not find reason to disagree with the assessment that FHWA/VDOT's Preferred Alternative appears to be the Least Environmentally Damaging Practicable Alternative (LEDPA), noting that the USACE comments do not constitute a final LEDPA determination or indication of a permit decision (Note: the Preferred Alternative identified in tables and figures throughout the Final SEIS and Technical Reports refers to the FHWA/VDOT Preferred Alternative).

Prepared in accordance with the implementing regulations of the National Environmental Policy Act (NEPA) at 23 CFR §771.130 and 40 CFR §1502.9(c), the Final SEIS addresses public and agency comments received on the September 2014 Draft SEIS, documents the FHWA and VDOT Preferred Alternative and the updated analysis associated with the FHWA/VDOT Preferred Alternative, and documents the action of the CTB.

¹ Olsen, Colonel Paul B. Letter to Aubrey Lane, Jr. 9 Jan. 2015. Norfolk, Virginia.

1.1 RIGHT-OF-WAY AND RELOCATIONS

As part of the project planning process and in support of the Final SEIS analysis that is being prepared, this *Supplemental Right-of-Way and Relocations Technical Report* has been developed to identify and analyze the impacts on real estate within each study corridor and assess the potential acquisition and displacements resulting from the implementation of the build alternatives. This report is separated into three more sections, 2.0 through 4.0, describing the alternatives under consideration, regulatory context, methodology/assumptions, relocation, and real estate values for alternate corridors. The data and findings listed in this report are also summarized and discussed in **Section 3.2.1.4** of the Final SEIS.

1.2 BACKGROUND

In May 2005, FHWA published a Draft Environmental Impact Statement (DEIS) for the Route 460 Location Study that evaluated three candidate build alternatives (CBAs) as well as the No Build Alternative and Transportation System Management (TSM) Alternative. Following the publication of the 2005 DEIS, VDOT held two public hearings presenting the technical findings of the draft analysis. In November 2005, the CTB selected the new location alternative south of existing Route 460, with an alignment shift in Isle of Wight County to reduce residential and wetland impacts (referred to as Modified CBA 1) as the preferred alternative. A Final EIS (FEIS) was prepared that analyzed the environmental consequences of the preferred alternative in greater detail and was approved by FHWA in June 2008. FHWA issued a Record of Decision (ROD) in September 2008 selecting Modified CBA 1 to address the identified Purpose and Need. In November 2012, FHWA completed a NEPA Re-evaluation of the FEIS and in particular, Modified CBA 1, giving consideration to funding the project through the implementation of tolls. In reviewing the information presented in the 2008 Final EIS and the 2012 NEPA Re-evaluation, the USACE indicated that the Commonwealth's preferred alternative did not appear to be the LEDPA when compared to improving the existing road. Further development of additional information and analyses of the Commonwealth's preferred alternative resulted in an increase in the acreage of wetlands identified in the Modified CBA 1 corridor compared to the acreage of wetlands presented in the 2008 Final EIS. In 2013, FHWA and USACE determined that the preparation of a Supplemental EIS (SEIS) would be necessary in order to analyze new information with a bearing on the environmental impacts, particularly aquatic resource impacts. The SEIS also was determined to be necessary in order for the USACE to fulfill its statutory obligations under NEPA and as part of its decision making process to issue or deny authorization for impacts associated with the Route 460 corridor improvements.

The Draft SEIS was published in September 2014 and presented at three Location Public Hearings that took place in October 2014.

The Draft SEIS provided detailed analysis of five Build Alternatives (Alternatives 1-5) that met the Purpose and Need, including two alternatives on new alignment (Alternatives 1 and 3), one alternative with improvements to existing Route 460 (Alternative 4), alternatives that included a combination of new location alignment (with bypasses of the towns) with varying improvements to existing Route 460 between the towns (Alternatives 2N/S and 5N/S), and the No Build Alternative. The No Build Alternative included all planned and programmed transportation improvements in the study area that had been approved and adopted for implementation by 2040.

Following the publication of the Draft SEIS, VDOT determined that none of the five Build Alternatives evaluated over the extent of the study corridor would be viable options based on public comments that were received, input from the resource and regulatory agencies regarding the estimated environmental impacts including potential CEQ referral, and the cost opinions that had been developed. In order to identify a single alternative that was less impactful, as well as less costly, while sufficiently addressing the Purpose and Need, VDOT explored a combination of segments from the Draft SEIS alternatives in various configurations to develop hybrid alternatives. The goal of the hybrid development was to arrive at a recommendation for a preferred alternative that could be considered the LEDPA while sufficiently addressing the project's Purpose and Need and providing a cost effective solution. Refer to the *Supplemental Alternatives Technical Report* (VDOT, 2016e) for additional information regarding the hybrid development and refinement process.

In January 2015 VDOT, in close coordination with FHWA reconsidered the alternatives studied in the Draft SEIS and developed a 52-mile FHWA/VDOT Preferred Alternative, which included the No Build Alternative over most of its length (36 miles), with portions of four alternatives from the Draft SEIS (4, 2N, 3, and 1) for 16 miles. Since the identification and approval of the location of the FHWA/VDOT Preferred Alternative, further refinements were applied in order to avoid and minimize impacts to the greatest extent practicable. The FHWA/VDOT Preferred Alternative, including these further refinements, has been carried forward for detailed evaluation in the Final SEIS.

1.3 PURPOSE AND NEED

The purpose of the improvements to the Route 460 corridor is to construct a facility that is consistent with the functional classification of the corridor, sufficiently addresses safety, mobility, and evacuation needs, and sufficiently accommodates freight traffic along the Route 460 corridor between Petersburg and Suffolk, Virginia.

The following needs have been identified for the project:

- Address roadway deficiencies: Route 460 is based on outdated geometric standards.
- Improve safety: Fatality rates for Route 460 are higher than other comparable rural roadways in Virginia.
- Accommodate increasing freight shipments: Truck percentages for Route 460 are higher than
 national averages for rural roads with a similar functional classification. Truck volumes are also
 forecast to grow due to expansions at the Port of Virginia.
- Reduce Travel Delay: Future traffic volumes will result in increased travel delays on Route 460 due to capacity limitations at traffic signals and due to the current design deficiencies.
- Provide adequate emergency evacuation capability: Route 460 is a designated hurricane evacuation
 route for Southside Hampton Roads communities, yet during recent events, the road was closed
 due to effects caused by these storms.
- Improve strategic military connectivity: Route 460 is a designated part of the Strategic Highway Network (STRAHNET) by the Department of Defense (DOD) and FHWA.
- Support local economic development plans: In addition to statewide and regional economic
 development needs, jurisdictions along the Route 460 study area have identified economic
 development priorities related to transportation improvements.

Through the evaluation of hybrid alternatives, which is detailed in the *Supplemental Alternatives Technical Report* (VDOT, 2016e), the following were identified as key improvements necessary for addressing the Purpose and Need, even if these improvements involved a hybrid alternative less than the full length of the Route 460 corridor.

- Improvements are needed along Route 460 at the Blackwater River to address longstanding flooding issues associated with safety and evacuation concerns and roadway deficiency.
- Improvements are needed at Route 58/Route 460 to provide efficient traffic movements to decrease travel time, facilitate increased freight mobility, and better accommodate emergency evacuation.
- Improvements to the eastern portion of the corridor to improve safety, as this area has the largest number of conflict points compared to the rest of the corridor; enhancements to travel time, freight mobility, and evacuation from the coastal areas would be better realized with improvements to the eastern portion of the corridor.

Based on the identification of these key components necessary for addressing the Purpose and Need, geographic limits for the hybrid alternative were refined within the eastern portion of the study corridor, where these key project components were focused and the elements of need had been demonstrated in the Draft SEIS as more pronounced. In developing hybrids, it also was important to consider opportunities to minimize environmental impacts, such as displacements and aquatic resources, and costs. Following a detailed evaluation of hybrid alternatives that focused on the eastern portion of the study corridor, FHWA/VDOT Preferred Alternative was ultimately identified as the most effective improvement option for the 16 miles for which the improvements were considered; it best addresses the project's Purpose and Need, while balancing cost, displacements, and wetlands.

1.4 FINAL SEIS ALTERNATIVES

Two alternatives are included in the Final SEIS – the FHWA/VDOT Preferred Alternative and the No Build Alternative. Following is a description of each alternative.

1.4.1 No Build Alternative

The No Build Alternative has been included to serve as a baseline for comparison of future conditions and impacts. The No Build Alternative includes all planned and programmed transportation improvements within the study area that have been approved and adopted for implementation by 2040, as identified in the VDOT Six Year Improvement Program (SYIP). These planned and programmed improvements would be developed and implemented independent of the implementation of the FHWA/VDOT Preferred Alternative. The No Build projects within the study area and projects that have the potential to affect capacity within the study area are listed in **Table 1-1**.

VDOT UPC / Locality **MPO ID** Description Construction of added left turn lane on westbound Route 460 at Enterprise 100499 Drive (Route 657). Construction of added left turn lanes on northbound Bull Hill Road (Route 630) Prince 82849 onto Route 460 in Prince George County. George Construction of right turn lanes on Courthouse Road (Route 106) at its 105110 intersection with Prince George Drive (Route 616). 104847 Construction of added left turn lane on Route 156. Improvements to Route 627 by widening, improving the drainage, and 107529 Surry straightening the roadway. N/A No projects listed. Sussex Southampton N/ANo projects listed. Construction of added left and right turn lanes on Courthouse Highway (Route 58297 258) at its intersection with Scotts Factory Road (Route 620). Isle of Wight Construction of a right turn lane on Turner Drive (Route 644) at the intersection 103021 with Benns Church Boulevard (Route 10/32). Improvements to drainage and stormwater management facilities along Pruden 104333 Boulevard (Route 460). Intelligent transportation system (ITS) improvements to 11.6 miles of the 102994 Suffolk Bypass (Route 58) from the City of Chesapeake to Holland Road. Reconstruction with added capacity on Route 58/Holland Road between the 100937 Suffolk Route 58/13/32 bypass to just west of Manning Bridge Road. Intersection improvements to Suffolk Bypass Off-Ramp at Godwin Boulevard. 102998 Construction of second exclusive right-turn lane and traffic signal improvements. Improvements to the intersection of Godwin Boulevard (Route 10) and Kings 104332 Highway (Route 125).

Table 1-1: No Build Projects within the Route 460 Study Area Jurisdictions

Source: Virginia Department of Transportation FY 2016 Final SYIP; Hampton Roads 2040 Long Range Transportation Plan: Committed and Candidate Transportation Projects, September 2014.

1.4.2 FHWA/VDOT Preferred Alternative

The FHWA/VDOT Preferred Alternative is a 52-mile corridor between I-295 in Prince George County and Route 58 in Suffolk. **Figure 1-1** illustrates the FHWA/VDOT Preferred Alternative compared to the Build Alternatives from the Draft SEIS. Following is a description of the FHWA/VDOT Preferred Alternative, from west to east:

- from I-295 to approximately one mile west of Zuni the No Build Alternative would be implemented (approximately 36 miles);
- from approximately one mile west of Zuni to two miles west of Windsor the existing US 460 would be upgraded to a four-lane divided highway and include a new bridge across the Blackwater River to eliminate long standing flooding problems (approximately 4 miles);
- from approximately two miles west of Windsor to the US 460/58 interchange in Suffolk, a new four-lane divided highway would be constructed, running north around Windsor, then east of Windsor running south of the existing US 460 (approximately 12 miles).

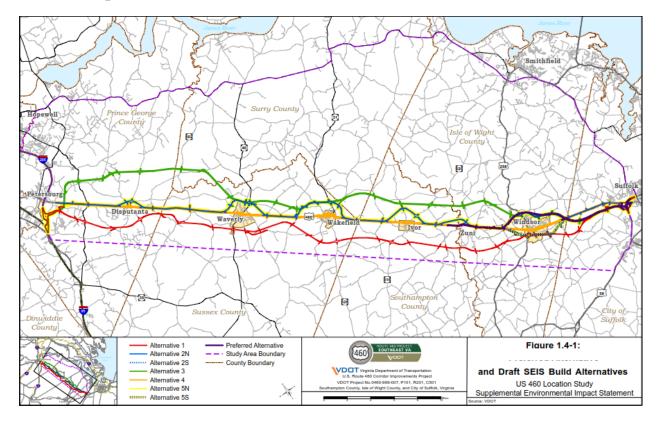


Figure 1-1: FHWA/VDOT Preferred Alternative and Draft SEIS Build Alternatives

1.4.3 Inventory Corridor and Design Corridor

In order to identify resources along the Build Alternatives analyzed in the Draft SEIS, a 500-foot wide Inventory Corridor was developed to identify resources within a reasonable proximity of each alignment. None of the alternatives were anticipated to impact all of the resources identified within their respective Inventory Corridors as these corridors did not reflect the actual impacts of each of the alternatives in comparison to one another. Instead the Inventory Corridors were developed for the purposes of providing greater flexibility to further avoid and minimize impacts as design advanced.

In order to estimate impacts and compare alternatives, the conceptual designs and typical sections were applied to each Build Alternative in the Draft SEIS to develop a Design Corridor to represent the likely "footprint" for each alternative. The reported impacts in the Draft SEIS were based upon the Design Corridor, which included roadway width, proposed right-of-way, and construction limits. The Design Corridor for each alternative was able to be shifted within the Inventory Corridor to avoid or minimize impacts to resources with knowledge of the consequences of those shifts. In addition, both the SEIS Inventory and Design Corridors were adjusted as necessary to account for design elements associated with each Alternative, including interchanges, at-grade intersections, side road overpasses, interface geometry with bypasses, etc. Details regarding the design elements that were factored into the development of each alternative and the typical sections developed for them are included within the appendices of the *Alternatives Technical Report* (VDOT, 2014e).

Design and engineering were advanced in order to develop the Joint Permit Application (JPA) for the FHWA/VDOT Preferred Alternative, which requires that the Design Corridor, a planning level design, be refined to understand the specific area to be impacted by the project, known as the Limits of Disturbance (LOD). As described in the sections that follow, the typical sections were refined to more accurately reflect

the anticipated LOD, which includes both temporary and permanent impacts, including stormwater management facilities and construction access. To the extent practicable, the LOD was developed to avoid and minimize impacts to resources, including wetlands and streams. This LOD has been used to calculate predicted impacts of the FHWA/VDOT Preferred Alternative.

2.0 REGULATORY CONTEXT AND METHODOLOGY

This *Supplemental Right-of-Way and Relocations Technical Report* was developed in support of the Final SEIS evaluation of the FHWA/VDOT Preferred Alternative. Probable impacts associated with the limit of disturbance (LOD), or current project design, have been identified to estimate displacements and an overall right-of-way cost associated with the proposed project improvements.

This *Supplemental Right-of-Way and Relocations Technical Report* has been prepared in consideration of the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended (Uniform Act). Procedures used to produce the data contained in this report were developed in accordance to the guidelines of the Virginia Department of Transportation (VDOT) Manual of Instructions, Right-of-Way Division, Volumes I and II (VDOT, 2011). The purpose of this report is to estimate the total cost of right-of-way acquisition as well as the number of households, businesses, non-profit organizations, and farms displaced by the FHWA/VDOT Preferred Alternative.

Evaluations along the corridor used GIS data, aerial photography, Google® Street View, field inspections of the project LOD, and feedback from public hearings to aid in tabulating impacts. As this is a planning level right-of-way study based on preliminary design estimates, the project staff did not physically inspect any property or contact local citizens to determine such factors as population per household, minority status, owner/renter status, or income. Nor did staff contact individual businesses or non-profit organizations to determine the number of employees, members, minority status, or owner/renter status. The scope involved quantifying the number and cost of buildings, valuation of the corridor proposed acquisition areas, as well as impacts to properties as a result of the project.

The project limits for the FHWA/VDOT Preferred Alternative was overlaid onto available maps to determine which parcels would be impacted. This process integrated third party GIS data files for the FHWA/VDOT Preferred Alternative with the VDOT imagery provided. Microstation and imagery programs were used to note all structures that lay within the FHWA/VDOT Preferred Alternative project limits. These would require relocation of occupants and demolition of the existing improvements.

The same GIS and imagery files were examined to estimate the proximity impacts and access issues for structures that lie outside the corridor, but may be impacted sufficiently to justify the total acquisition of the property and the relocation of its occupants. National and regional proximity studies, county setback criteria, and setback trends were referenced to determine potential property impacts to dwellings along the Preferred Alternate corridor. These studies determined likely setbacks from the LOD that would be required, where proximity damages would justify the acquisition of the structure. Structures outside the LOD and lacking reasonable access to remaining roads were also proposed to be acquired when noted, and these would require relocations for occupants. **Table 2-1** below shows the general rules for Proximity Damage adjustments applied to the anticipated property acquisitions:

 Estimated Setbacks
 Percent Adjustments

 < 10 Feet</td>
 80%

 10-30 Feet
 60%

 30-50 Feet
 40%

 50-75 Feet
 30%

 75-100 Feet
 20%

Table 2-1: Proximity Rules for Damage Adjustments

Damages are applied to improvements only if land residue is larger than 80,000 square feet (SF). Damages are applied to land and improvements only if land residue is less than 80,000 SF.

Spreadsheets that tabulated impacted structures were created utilizing this information. These were organized by County jurisdiction and property type. Information for each parcel was gathered from the most recent Tax Assessment records, including use of the structure, approximate size and age, and assessed value of improvements. For single tax parcels that included multiple structures, the project team coordinated with County staff in order to determine the assessed values for each structure.

An evaluation of available replacement housing was conducted for residential, business, farm, and nonprofit organization displacements. This work was completed in conformance with a standard Stage 1 Relocation Report. Relocation costs were developed from local VDOT data and recent similar projects in accordance with VDOT's Manual of Instructions, Right-of-Way Division, Volume 1. Demolition costs for acquired structures were gathered from local demolition contractors, previous VDOT contracts, and national costing services.

Displacements were summarized according to structure type and use as follows:

- Residential
- Business
- Farm
- Non-profit (church, utility, civic, school, government)

Structures that were considered to be inaccessible as a result of the implementation of the project were counted as a total taking and relocation if there was no readily available direct solution to preserve access. These total take and relocation assumptions were made for the purpose of this planning study based on preliminary engineering, but access would be considered as the design advanced on a case by case basis. The Limited Access sections of the FHWA/VDOT Preferred Alternative would have no driveways or curb cuts permitted, thus eliminating potential access to intersecting parcels from the proposed new location facility. The remaining sections of the FHWA/VDOT Preferred Alternative that would be reconstructed and upgraded would maintain full access to adjoining parcels.

Where possible, structures that may suffer losses in value from noise related to the corridor were identified and studied for distances from the corridor and orientation to the corridor to determine potential impacts to value.

Each acquired structure's cost used the locality's most recent assessed value as a base number. This assessed value then was converted to a market value estimate through the use of sales/assessment ratios. These were ratios that converted assessed values to estimates of market value. These ratios are compiled by property type and jurisdiction (where available) annually by the Virginia Tax Commission. Sales/assessment ratio studies were also conducted, as a more current (2014) QA/QC check of the Tax Commission studies (last updated February, 2013). From this information it was determined that a 1.10 ratio was appropriate for all of the counties in the study area.

The land within the corridor was valued for acquisition. In cases where building improvements on a large acreage parcel would be acquired and a relocation would be required, only the land value for a typical home site was included in the value of the acquisition. A typical home site was derived by analyzing the properties surrounding the subject parcels. Unless the land residue would be damaged because of proximity, the remaining property's unit value (price per acre) was assumed to be unaffected by the acquisition for the purposes of this analysis.

The final cost estimates are presented by property type, jurisdiction, and total cost for the FHWA/VDOT Preferred Alternative. These final costs also list contingencies for unknown factors.

3.0 ASSUMPTIONS

3.1 RIGHT-OF-WAY ASSUMPTIONS

Right-of-way and relocation costs were determined based on a planning level engineered project limits for the FHWA/VDOT Preferred Alternative. It should be noted that there is a potential for the number of properties and/or damage thereto to increase or decrease as the design progresses.

Temporary and permanent easement areas and locations are not known at this planning level of analysis. Percentages were included in the summaries to represent a value estimate for all easements. Depending on the type and size of actual future easements, the estimates could require refinement.

There were several potential acquisitions of railroad property for the FHWA/VDOT Preferred Alternative. These parcels were not individually assessed and taxed by the Counties. With a lack of tax data, the acquisition values for these properties were assumed to have the same values as surrounding properties. It was assumed that any significant conflicts with railroad infrastructure could be accommodated with slight alignment shifts if necessary.

The public records did not provide the acreage for all parcels impacted; therefore, the areas for these parcels were estimated using GIS information.

3.2 COST ASSUMPTIONS

3.2.1 Land and Improvement Cost Assumptions

Real estate assessments from the Counties of Isle of Wight and Southampton and the City of Suffolk provided baseline values for land and improvements. For some parcels, the real estate assessment data included no values. If no data was available from County or City Tax Assessment officers via telephone, project staff estimated a value for land based on the average assessment per square foot for similar land use (i.e. residential, commercial, industrial, agricultural). Land and improvements located within the Preferred Alternate LOD were considered necessary for right-of-way acquisition. The project team reviewed

potential access points and determined if property access would be anticipated to be maintained, relocated, or cut off. Based on preliminary engineering review, in many cases it would be feasible to maintain or relocate access to minimize displacements due to a loss of access. Nevertheless, if access to part or all of a parcel would be removed and could not be restored, the severed portion would also be considered a taking. These assumptions were made for the purpose of this planning study based on preliminary engineering, but access would be considered as the design advanced on a case by case basis. Right-of-way acquisitions included total and partial property takes and were defined for this study as follows:

- A total take would occur when the primary improvement (house, business, non-profit, or farm) would be within the right-of-way. The owner would be compensated for the market value of the entire parcel and provided relocation assistance.
- A partial take would occur when a portion of a parcel would be acquired and that portion would not include a primary improvement. The owner would be compensated for the fair market value of the acquired portion of their parcel and any improvements within the taking.
- Where impacts would create uneconomic remnants of the remaining parcel as defined below, the
 owner would be compensated for the market value of their entire parcel, and would be provided
 relocation assistance if a habitable building were acquired in this manner. The definition is as
 follows:
 - o the remainder of such tract or part thereof could no longer be utilized for the purpose for which the entire tract was then being utilized;
 - a portion of a building would be taken or the cost of removal or relocation of the buildings,
 or other improvements on the remaining portion, necessitated by the taking, would exceed
 the cost of demolition of such buildings or other improvements;
 - o the highway project would leave the remaining portions without a means of access to a public highway; or,
 - o whenever it was judged that the resulting damages to the remainder of such tract or part thereof lying outside the proposed right-of-way, or the area being acquired for a purpose incidental to the construction, reconstruction, or improvement of a public highway, would approximate or equal the fair market value of such remaining lands.

In the Commonwealth of Virginia, real estate assessments are required to be at 100 percent of fair market value. Since jurisdictions update assessments on varying schedules and market factors can affect the local real estate market, a variance between the assessed value and the actual sale price often exists. To compensate for this variance, project staff located comparable sales for different land uses in each jurisdiction to study the tax assessed value and sale price of each comparable sale. This comparison generated a multiplier, which was applied to properties within this project. If this factor was less than one (i.e. the sale price was less than the assessed price) then the assessed values were used. This approach complied with recent code changes, which required that landowners be compensated for the greater of market value or assessed value. To this fee simple taking value on each parcel, staff added a percentage for likely easements, value of acquired improvements, and damages to the remainder, if any.

Once the value for the fee taking was calculated and totaled for each jurisdiction, additional costs were added for contingencies, including incidental costs, administrative settlements, unknown conditions, and condemnation settlements. These costs were estimated as follows:

- Easement expenses: 7.5 percent of total land cost.
- Administrative expenses: \$11,000 per parcel was added to the overall cost for administrative
 expenses (fee appraisal and review, title examinations, negotiations, relocation support, and closing
 costs).
- Administrative settlements: 40 percent of the fair market value was added to 40 percent of the parcels to account for administrative settlements.
- Condemnation increment: 45 percent of the fair market value estimate of the taking was added to 45 percent of the parcels as a condemnation cost factor.
- Unknown settlements: 20 percent of the fair market value estimate of the taking was added to 15 percent of the parcels to accommodate potential hazardous properties, unknown site or building conditions, or additional damages and cost to cure issues. Any specific hazardous properties were not identified as part of this planning level analysis.

The net result of these contingencies (derived by multiplying them all together) is a multiplier of approximately 1.4 applied to the real estate costs acquired.

3.2.2 Relocation Cost Assumptions

Relocation costs were determined in accordance with VDOT's Manual of Instructions, Right-of-Way Division, Volume 1. Chapter 6 of this manual specifically deals with relocation expenses. Project staff evaluated the various components that make up the relocation estimate. At this early "Preliminary Planning Stage," project staff considered moving costs, replacement housing payments, household demographics, reestablishment expenses, available housing inventory, and housing of last resort. Some relocation payments may consist of moving costs only. Other relocation expenses may be considerably higher, especially housing of last resort in areas with limited replacement housing. Given the variable nature of right-of-way relocations, average costs for each type of relocation were established through coordination with VDOT's Hampton Roads Right-of-Way staff.

Structures (improvements) located within the project limits footprint dimensions were considered necessary for right-of-way acquisition. A displacement with the occupant provided relocation assistance was considered if the primary improvement of a residence, business, non-profit, or farm was located within the right-of-way or if access would be removed and could not be restored. Conversely, if only a minor improvement, but not the main structure were located within the right-of-way, it would be calculated as a damage cost and not considered a relocation.

Residential buildings appeared to be single-family, but may include more than one dwelling per parcel. In some cases, dwellings straddled a lot line, in which case all improvements were allocated to only one lot. The number of dwelling units for each displaced parcel was determined using aerial imagery and County records where available. For the purposes of this analysis, each residential unit was assumed to contain one household.

In this study, all mobile and manufactured homes were classified as single-family residential units (i.e. real property) regardless of its foundation type and landscaping. Manufactured homes may be on rented or owned land, and can be real property or personal property (chattel). All manufactured homes were assumed to be owner occupied real property for this study. Specific treatment of these homes as real or other property, and their relocation costs, will be determined during final right-of-way acquisition. Because of a shortage of replacement mobile home sites and the difficulty in moving them once in place, housing of last resort often drives these relocation costs well beyond those of a non-manufactured home.

Business and farm characteristics were based on aerial imagery and county records. Nonprofit characteristics were determined based on aerial mapping, along with property descriptions and zoning data from tax assessments. Examples of nonprofit organizations included schools, fire and police departments, utility companies, post offices, churches, and civic buildings. Direct contact was not made with potentially displaced residents, business owners, non-profit organizations, or farm owners.

The distinctions between residential and farm relocations largely involved the quantity of land and farm-use buildings remaining "after" the taking. If only a dwelling would be acquired, and there appeared to be sufficient land for rebuilding a home and maintaining use of farm buildings, this was considered only a residential relocation. If farm and agricultural buildings would also be within the take area, or there would be insufficient remaining land for a new dwelling and/or insufficient remnant for farming, this was treated as a farm relocation.

Factors in the project area that are likely to increase relocation costs are the relatively low household incomes, the lack of available replacement housing, and population per household. Because of the high number of relocations, it is likely that replacement housing would have to be either constructed, or acquired homes would be moved to land on the parcel residues, if sufficient land were to remain. It is likely that some acquired dwellings will be substandard, and the requirement to relocate them to decent safe and sanitary homes would result in relocations to larger dwellings. An additional assumption was that each dwelling would utilize a commercial moving service instead of moving themselves. Note that minority status, household income, owner/renter status, number of employees, number of occupants, and other income levels were not accounted for in this study. These costs were also based on recent relocation events in the Hampton Roads area, and were supported by senior VDOT relocation staff. Relocation cost assumptions were as follows:

- \$75,000 relocation expense for each residence
- \$100,000 relocation expense for each mobile home
- \$110,000 relocation expense for each business, non-profit organization, church, school, government structure, or farm.
- \$5,500 per grave for re-internment.

3.2.3 Utility, and Easement Cost Assumptions

No easements were included in the corridor at this design stage. Using the assumption that easements would be needed for the corridor, a contingency was added to the total acquisition cost.

Impacts of easements were accounted for by adding a percentage contingency to the total fee simple land value for each parcel. It was assumed that the average easement width needed for an entire corridor was 20-25 feet on one side of the corridor only. Easement values generally fell within the range of 20 percent for temporary uses to 80 percent for permanent slope uses, and tended toward a median value of 50 percent of the fee simple land value.

With the variable corridor width for the FHWA/VDOT Preferred Alternative LOD, but tending toward a width of 120 feet, a 20 foot easement added approximately 15 percent to the affected land area for each parcel. Multiplying the 15 percent easement area by a median easement rate of 50 percent indicated that easements would add 10 percent to the fee simple land value acquired.

It is possible that actual easements at later stages would trigger higher easement rates, additional relocations, or damages, such as when a dwelling's existing drainfield or private well lies within a required easement area and the dwelling lacks a private utility replacement area. As the project design evolves, LOD would be monitored in case it results in additional relocations or severe damages.

4.0 RELOCATIONS AND REAL ESTATE VALUES FOR PREFFERED ALTERNATIVE

4.1 SUMMARY OF DISPLACEMENTS AND RELOCATION CATEGORIES

Land uses within the project limits were characterized by residential, commercial, industrial, and agricultural land uses. Displacements within the project limits were divided into four types of impact (residential, business, non-profit, or farms).

The evaluation of potential acquisitions and relocations was conducted in accordance with the Uniform Act. VDOT would provide equitable treatment for those persons, businesses, non-profits, and farms displaced by this project. Relocation resources would be available to all displaced persons, businesses, non-profits, and farms without discrimination.

The FHWA/VDOT Preferred Alternative would require 29 relocations for the displacement impacts for the project limits.

A summary of all displacements by jurisdiction is listed in **Table 4-1** in order to provide a more detailed picture of the impacts associated not only with the land use, but also by jurisdiction.

PREFERRED A	ALTERNATIVE DIS	SPLACEMENTS	BY COUNTY	
	RESIDENTAL	BUSINESS	FARM	OTHER
Southampton County	0	0	0	0
Isle of Wight County	15	4	0	1
City of Suffolk	6	2	1	0
Totals	21	6	1	1

Table 4-1: Displacement by the FHWA/VDOT Preferred Alternative

4.2 RIGHT-OF-WAY/UTILITY COSTS

Appendix B lists the detailed probable right-of-way and utility costs for the project limits, with a summary that provides a breakdown of various costs (i.e., land and improvements, damages, relocations, right-of-way services, administrative settlements, condemnations, unknown settlements, etc.) which cumulatively make up the total value calculated.

The utility cost estimate was derived from information obtained from a comprehensive field review of apparent utilities identified within the project limits. Discussions were held with water, sewer, and gas owners to determine the location of facilities they own along the alignment.

All utilities within the project limits were assumed to be in conflict with the proposed improvements and the associated relocation costs were included in the estimated project cost total (this is the worst-case scenario assumption, if the utility owners do not have an easement or permit or other right to be located where they are, the utility owners would be required to pay for the relocation costs). The cost assumptions used for the utility portion of the estimate were derived from the VDOT Project Cost Estimating System (PCES), historical data obtained from other VDOT projects, and estimated costs obtained from the utility owners. A 25 percent contingency was applied to the estimated relocation costs to address administrative costs and any unaccounted utilities that may be in conflict. Refer to Appendix C for detailed documentation and supporting calculations.

4.2.1 Preliminary Costs

In support of the Final SEIS, preliminary cost opinions were developed to determine the anticipated project cost for the FHWA/VDOT Preferred Alternative. For typical NEPA evaluations for transportation projects in Virginia, the VDOT PCES would be used to generate costs for comparison of the alternatives. However, this system does not allow for the comparison of similar typical sections that have differing applications and lacks the flexibility to look at specific roadway configurations. Therefore, study specific cost opinions were developed.

Table 4.2-2 includes a total construction cost, including contingency and preliminary engineering, for the FHWA/VDOT Preferred Alternative. In addition to preliminary engineering and construction items, costs were developed for the anticipated right-of-way requirements and utility relocations required. A detailed description of the methodology used to calculate these costs along with descriptions of the specific parcels anticipated to be acquired are found in this report. Environmental mitigation costs include potential wetland, stream, and noise impact mitigation. A detailed description of the methodology used to calculate wetland and stream costs can be found in the *Supplemental Natural Resources Technical Report* (VDOT, 2016f). A detailed description of the methodology used to calculate noise impact mitigation costs is included in **Appendix E** of the Final SEIS. Refer to **Appendix C** of the *Supplemental Alternatives Technical Report* (VDOT, 2016e) for the detailed documentation and supporting calculations for the Probable Opinion of Costs developed for each of the pay items, categories, and groups. Costs would be refined during future phases of project development as additional design information is developed.

Description	Cost (millions)
Preliminary Engineering	\$27
Construction ^{1,2,3}	\$314
Right-of-Way & Relocations ⁴	\$22
Utilities ⁴	\$17
Environmental Mitigation ⁵	\$13
SUB-TOTAL (without Construction Contingency)	\$393
Construction Contingency ⁶	\$55
TOTAL	\$448

Table 4-2: Cost Estimate for the FHWA/VDOT Preferred Alternative

NOTES

- 1. Construction costs are based on VDOT Historical Bid Listings from February 2011 through March 2013.
- 2. Construction cost assumptions are detailed in the Alternatives Technical Report Appendix B
- 3. Construction cost is the sum of raw construction cost, mobilization cost, and construction engineering and inspection cost.
- 4. Right-of-Way and Utilities costs are detailed in this report.
- 5. Environmental mitigation costs include Wetland, Stream and Noise Impact Mitigation. Refer to Natural Resources Technical Report and the Noise Analysis Technical Report for cost methodology and assumptions.
- 6. Construction contingency was assumed to be 20% of raw construction cost and is not applied to the Preliminary Engineering, Right-of-Way & Relocations, Utilities, or Environmental Mitigation costs.

APPENDIX A Summary of Displacements for the FHWA/VDOT Preferred Alternative

		RELOCATIONS		
	RESIDENTIAL	BUSINESS	FARM	CHURCH, GOVT, ETC.
Preferred Alternative	21	6	1	1

	P	PARCELS IMPACTED)	
	SOUTHAMPTON	ISLE OF WIGHT	SUFFOLK	TOTAL
Preferred Alternative	5	116	47	168

APPENDIX B Summary of Detailed Costs by Category and Parcel

# PARCELS AFFECTED	LAND & IMPROVEMENT COST	DAMAGES	RELOCATIONS	ROW SERVICES	ADMINISTRATIVE SETTLEMENTS	CONDEMNATIONS	UNKNOWN SETTLEMENTS	ROW & RELOCATION COSTS	UTILITY COSTS	TOTAL ROW & UTILITY COSTS
168	\$12.80	\$6.12	\$2.46	\$ 1.85	\$2.05	\$2.6	\$0.03	\$22.12	\$ 17.0	\$39.12

Values listed are in millions of dollars. Rounding of significant figures creates minor variations in some cases.

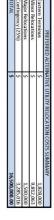
DETAILED COSTS BY TAX PARCEL OVERLEAF

APPENDIX C Utility Documentation and Supporting Calculations

A management			
\$ 1.828,000	TOTAL		
5			Transmission Tower
\$ 84,000	1	1200	Gas Line (6" Diameter)
\$ 180,000	1	1200	Sanitary Sewer (10" Diameter)
\$ 384,000	1	1200	Waterline (16" Diameter)
\$ -			Aerial Cable
\$ 460,000	1	4600	Aerial Fiber
- 8			U/G telephone
\$			Aerial Telephone
\$ 260,000	1	5200	1-phase electric
\$ 460,000	1	4600	3-phase electric
Relocation Cost	Number of Lines	Relocation Length (LF)	Utility
		EASTERN TERMINUS	

			EASTERN TERMINUS	9
\$ 1,500,000	12 & 20	ŀ	1000	6-1
		EA		11-3
Cost	Diameter (in)	Unit	Amount	<u>a</u>
		RY	MAJOR UTILITY RELOCATIONS SUMMA	

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\$ - \$ 130,000			\$ 55,000	\$ 7,500	\$ 12,500	3 phase electric (\$)
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					S	e(5)
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		1	1		1	Number of Lines
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v	\$ \$ \$ \$	1 5	1 1 5	1 1	1 1	Number of Lines
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660,000			660,000			Sanitary Sewer (\$)



INVIES
Removed 2 x \$1,000,000 for Transmission Towers
Reduced lengths of impacts based on design updates
Reduced impacts by avoidance of 2 Transmission Towers

